ABSTRACT

The adaptive artificial vision method comprises the following steps: (a) defining successive couples of timesteps (t_{-1}, t ; t, t_{+1} ;...) synchronized by a clock (101), (b) comparing two successive images (I_{t-1}, I_t ; I_t, I_{t+1},...) from an input device (102, 103) at each couple of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...) spaced by a predetermined time delay τ_0 for obtaining a delta image Δ_t which is the result of the computation of the distance between each pixel of the two successive images (I_{t-1}, I_t ; I_t, I_{t+1},...) in view of characterizing movements of objects, (c) extracting features from the delta image Δ_t for obtaining a potential dynamic patch P_t which is compared with dynamic patches previously recorded in a repertory which is progressively constructed in real time from an initial void repertory, (d) selecting the closest dynamic patch D_i in the repertory or if no sufficiently close dynamic patch still exists, adding the potential dynamic patch P_t to the repertory and therefore obtaining and storing a dynamic patch D_i from the comparison of two successive images (I_{t-1}, I_t ; I_t, I_{t+1},...) at each couple of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...), and (e) temporally integrating stored dynamic patches Di of the repertory in order to detect and store stable sets of active dynamic patches representing a characterization of a reoccuring movement or event which is observed. A process of static pattern recognition may then be efficiently used.

(Figure 7)